

Appl. No. 09/611,447  
Amdt. dated May 28, 2004  
Reply to Office action of March 2, 2004

In the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

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1. (currently amended) In a data communication network comprising a plurality of optical label switching routers and fiber optic links between said optical label switching routers, a method of representing optical network bandwidth, said method comprising:

assigning an optical label to a channel group, said channel group using one of said fiber optic links and comprising a plurality of channels;

encoding said optical label so as to comprise a type field, a length field and a value field, where said value field comprises a label component and where said label component comprises an indication of currently available bandwidth on each of said plurality of channels.

2. (currently amended) The method of claim 1 wherein said indication of currently available bandwidth identifies said one of said fiber optic links and a wavelength on said one of said fiber optic links.

3. (currently amended) The method of claim 2 wherein said indication of currently available bandwidth further identifies said channel group.

4. (currently amended) The method of claim 3 wherein current availability of bandwidth on each of said plurality of channels is represented by a single bit.

5. (currently amended) The method of claim 4 wherein a bit value of zero for said single bit indicates currently available bandwidth on a given one of said plurality of channels.

6. (currently amended) In a first data communication network comprising a plurality of optical label switching routers and fiber optic links between said optical label switching routers, a method of representing traffic characteristics ~~of an interface between a node in a service network and one of said optical label switching routers, said method~~ comprising:

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encoding a representation of said traffic characteristics of said an interface between one of said optical label switching routers in said first data communication network and a node in a second network so as to comprise a type field, a length field and a value field, where said value field comprises an attribute of said second network.

7. (currently amended) The method of claim 6 wherein said attribute comprises an indication of a service type of said service second network.

8. (currently amended) The method of claim 6 wherein said attribute comprises an indication of a control protocol of said service second network.

9. (original) In a data communication network comprising a plurality of optical label switching routers and fiber optic links between said optical label switching routers, a method of representing characteristics of an optical trail, said method comprising:

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encoding a representation of said characteristics of said optical trail so as to comprise a type field, a length field and a value field, where said value field comprises a channel group description; and

where said channel group description comprises an indication of channel group type and an indication of a number of members in said channel group.

10. (original) In a data communication network comprising a plurality of optical label switching routers and fiber optic links between said optical label switching routers, a method of specifying session parameters for an optical communication session over one of said fiber optic links, where said one of said fiber optic links originates at an originating label switching router, said method comprising:

encoding a specification of said session parameters so as to comprise a type field, a length field and a value field, where said value field comprises a range component; and

said range component comprises:

an identity of one of said fiber optic links;

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a lower bound of a block of wavelengths supported by said originating label switching router on said one of said fiber optic links; and

an upper bound of said block of wavelengths supported by said originating label switching router on said one of said fiber optic links.

11. (currently amended) One or more computer memories collectively containing a data structure for use in communicating information regarding a plurality of channels from a first label switching router to a second label switching router, said data structure comprising:

a type field;

a length field; and

a value field;

where said value field comprises a label component, and said label component comprises an indication of a current availability of bandwidth on each of said plurality of channels.

12. (currently amended) One or more computer memories collectively containing a data structure for use in communicating information regarding an interface between a node in a service network and a label switching router in a label switching network, said data structure comprising:

a type field;

a length field; and

a value field;

where said value field comprises an attribute and where said attribute comprises an indication of a service type of said service network.

13. (currently amended) One or more computer memories collectively containing a data structure for use in communicating information regarding an interface between a node in a service network and a label switching router in a label switching network, said data structure

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comprising:

a type field;

a length field; and

a value field;

where said value field comprises an attribute and where said attribute comprises an indication of a control protocol of said service network.

14. (currently amended) One or more computer memories collectively containing a data structure for use in communicating information regarding an optical label switching path from a first label switching router to a second label switching router, said data structure comprising:

a type field;

a length field; and

a value field;

where said value field comprises a ~~channel-group~~ description of a channel group and where said ~~channel-group~~ description comprises an indication of a channel group type for said channel group and an indication of a number of members in said channel group.

15. (currently amended) One or more computer memories collectively containing a data structure for use in communicating information regarding session parameters for an optical communication session over a fiber optic link from an originating label switching router to a receiving label switching router, said data structure comprising: (part of a method)

a type field;

a length field; and

a value field;

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where said value field comprises a range component and said range component comprises:

an identity of said fiber optic link;

a lower bound of a block of wavelengths supported by said originating label switching router on said fiber optic link; and

an upper bound of said block of wavelengths supported by said originating label switching router on said fiber optic link.

16. (currently amended) An optical label switching router operable to:

assign an optical label to a channel group, said channel group using one of a plurality of fiber optic links and comprising a plurality of channels;

encode said optical label so as to comprise a type field, a length field and a value field, where said value field comprises a label component and where said label component comprises an indication of currently available bandwidth on each of said plurality of channels.

17. (original) An optical label switching router operable to:

encode a representation of characteristics of traffic over an interface between a node in a service network and said optical label switching router so as to comprise a type field, a length field and a value field, where said value field comprises an attribute of said traffic.

18. (original) An optical label switching router operable to:

encode a representation of characteristics of an optical trail of a channel group so as to comprise a type field, a length field and a value field, where said value field comprises a description of said channel group; and

where said description of said channel group comprises an indication of a type of said channel group and an indication of a number of members in said channel group.

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19. (original) An optical label switching router operable to:

encode a specification of session parameters for an optical communication session over a fiber optic link so as to comprise a type field, a length field and a value field, where said value field comprises a range component;

where said range component comprises:

an identity said fiber optic link;

a lower bound of a block of wavelengths supported by said label switching router on said fiber optic link; and

an upper bound of said block of wavelengths supported by said label switching router on said fiber optic link.

20. (currently amended) A computer readable medium for providing program control for an optical label switching router, said computer readable medium adapting said optical label switching router to be operable to:

assign an optical label to a channel group, said channel group using one of a plurality of fiber optic links and comprising a plurality of channels;

encode said optical label so as to comprise a type field, a length field and a value field, where said value field comprises a label component and where said label component comprises an indication of currently available bandwidth on each of said plurality of channels.

21. (original) A computer readable medium for providing program control for an optical label switching router, said computer readable medium adapting said optical label switching router to be operable to:

encode a representation of characteristics of traffic over an interface between a node in a service network and said optical label switching router so as to comprise a type field, a length field and a value field, where said value field comprises an attribute of said traffic.

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22. (original) A computer readable medium for providing program control for an optical label switching router, said computer readable medium adapting said optical label switching router to be operable to:

encode a representation of characteristics of an optical trail of a channel group so as to comprise a type field, a length field and a value field, where said value field comprises a description of said channel group; and

where said description of said channel group comprises an indication of a type of said channel group and an indication of a number of members in said channel group.

23. (original) A computer readable medium for providing program control for an optical label switching router, said computer readable medium adapting said optical label switching router to be operable to:

encode a specification of session parameters for an optical communication session over a fiber optic link so as to comprise a type field, a length field and a value field, where said value field comprises a range component; and

where said range component comprises:

an identity said fiber optic link;

a lower bound of a block of wavelengths supported by said label switching router on said fiber optic link; and

an upper bound of said block of wavelengths supported by said label switching router on said fiber optic link.